April 3, 1973
Preliminary Copy
University of Idaho
Soil Conservation Service

Palouse Silt Loam 65 Ida 0504

General Site Characteristics

Location--Benewah County, Idaho, Mills place about 240 feet from west edge of field, southeast 1/4, southwest 1/4 section 32, T. 45 N., R. 5 W.; described--September 23, 1965 by Garber and Moore; topography--rolling loessial plain, smooth, 10 percent slope; elevation--2600 feet, aspect--southwest; parent material--loess; drainage--well; vegetation or use--lentils (harvested) with alfalfa for green manure; classification--Pachic Ultic Haploxeroll fine-silty, mixed, mesic.

Pedon Description

Ap 0-8 inches. Dark grayish brown (10YR 3.8/1.6) broken, dark grayish brown (10YR 3.6/1.8) crushed, silt loam, very dark brown (10YR 2/2) broken and crushed, moist; moderate very fine granular structure; weakly coherent, very friable, slightly sticky, slightly plastic; non-calcareous; many micro and very fine interstitial pores; abundant micro and very fine roots; abundant bleached silt grains on granulars; abrupt smooth boundary.

A1 8-13.5 inches. Dark grayish brown (10YR 3.6/1.6) broken, dark grayish brown (10YR 3.6/2) crushed, silt loam, very dark brown (10YR 1.8/1.6) broken, moist, very dark brown (10YR 2/2) crushed, moist; very weak fine subangular blocky to moderate fine granular structure; slightly hard, very friable, slightly sticky, slightly plastic; non-calcareous; many very fine tubular and interstitial pores; abundant micro and very fine roots; abundant bleached silt grains on granulars; abrupt smooth boundary.

A3 13.5-18 inches. Dark grayish brown (10YR 4/2.2) broken, brown (10YR 4.4/2.6) crushed, silt loam, very dark grayish brown (10YR 2.8/2.2) broken, moist, very dark grayish brown (10YR 3/2) crushed, moist; weak fine prismatic to weak medium to fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; non-calcareous; many micro and very fine, common fine tubular pores; abundant micro and very fine roots; very thin bleached silt coats, abrupt smooth boundary.

B1 18-24 inches. Brown (10YR 4.6/3) interior, broken, grayish brown (10YR 5/2) coats, broken, brown (10YR 5/3.2) crushed, silt loam, dark brown (10YR 2.8/3) broken, moist, dark brown (10YR 3.4/2.6) crushed, moist; weak medium to fine prismatic to weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; non-calcareous; many very fine and fine tubular pores; plentiful micro and very fine roots; thin silt coats on ped faces; clear smooth boundary.

B21 24-35 inches. Yellowish brown (10YR 5.2/3.6) broken, light brownish gray (10YR 6/2) coats, pale brown (10YR 5.8/3.4) crushed, silt loam, dark brown (10YR 3.8/3) broken, moist, dark brown (10YR 3.6/2.6) crushed, moist; weak medium prismatic to weak medium to fine subangular blocky structure; hard, friable, sticky, slightly plastic; non-calcareous; many micro and very fine

tubular and interstitial pores; plentiful micro and very fine roots; occasional clay films on vertical pore surfaces; extensive thin silt coats on ped faces; gradual smooth boundary.

B22 35-50 inches. Yellowish brown (10YR 5.4/4) broken, pale brown (10YR 6/3.4) crushed, silt loam, brown to dark brown (10YR 4/3.4) broken, moist, brown to dark brown (10YR 4/3) crushed, moist; weak medium prismatic to medium subangular blocky structure; hard, friable, sticky, slightly plastic; non-calcareous; many micro and very fine tubular and interstitial pores; plentiful micro and very fine roots; occasional clay films on vertical pore surfaces; extensive thin silt coats on ped faces; clear smooth boundary.

B31 50-60 inches. Yellowish brown (10YR 5.8/3.6) crushed, silt loam, dark brown (10YR 3.8/3) broken, moist, brown to dark brown (10YR 4/3) crushed, moist; very weak coarse prismatic structure; hard, friable, sticky, plastic; non-calcareous; many micro and very fine tubular pores; few micro and very fine roots; occasional thin patchy clay films; thin bleached silt coats on peds; common small black hard concretions; clear smooth boundary.

IIB32 60-67 inches. Yellowish brown (10YR 5.4/4) broken, light yellowish brown (10YR 5.8/3.6) crushed, silt loam, dark brown (10YR 3.8/3) broken, moist, brown to dark brown (10YR 4/3) crushed, moist; very weak coarse prismatic structure; hard, friable, slightly sticky, slightly plastic; non-calcareous; many micro and very fine tubular pores; few micro and very fine roots; common small black concretions; few MnO_2 splotches as below; clear smooth boundary.

IIBb 67-76+ inches. Pale brown (10YR 6/3.2) broken, pale brown (10YR 6/3) crushed, silt loam, dark brown (10YR 3.8/3.2) broken, moist, brown to dark brown (10YR 4/3) crushed, moist; compact nodules; hard, firm, slightly sticky, slightly plastic; non-calcareous; many very fine and fine tubular pores; few very fine roots; thin clay films on vertical and horizontal pore surfaces; few black concretions as above; few small splotches of MnO_2 on nodule surfaces; a 3/4" x 1" x 1-1/2" quartz gravel was found at 68 inch depth.

Four distinct continuous "clayey" bands were found in the B2 horizons, described as follows:

Band 1: Wavy, 1/4 inch thick, on ped surfaces and interiors, constituting moderate clay films on ped surfaces at 26.5-28.5 inches deep in the profile.

Band 2: Undulating 1/2 inch thick on ped surfaces and interior, constituting moderate clay films on peds at 33-38 inches deep in the profile.

Band 3: Undulating 3/4 inch thick on ped surfaces and interior, constituting moderate clay films on peds at 40-45 inches deep in the profile.

Band 4: Wavy 1 inch thick on ped surfaces and interior, constituting moderate clay films on peds at 49-52 inches deep in profile. One large (3 X 8) Krotovina was found in the center of the pit. Many tubules (1/4 inch diameter) coated and filled with dark material extend to more than six feet.

Chemical characterization and physical analysis of profile

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No.	Horizon	Depth in.	pH Paste	pH 1:5	ECx10^3	Saturation extract me/1000 gms soil							
						Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
1	Ap	0-8	6.05	6.25	.37								
2	A1	8-13.5	6.05	6.50	.30								
3	A3	13.5-18	6.20	6.45	.27								
4	B1	18-24	6.20	6.60	.25								
5	B21	24-35	6.45	6.65	.27								
6	B22	35-50	6.55	6.85	.26								
7	B31	50-60	6.55	6.95	.28								
8	IIBb	60-67	6.55	6.75	.25								

Exchangeable ions me/100 gms					C.E.C.	Base				O.M.	N		
Ca	Mg	Na	K	H	meq/100	Sat.%	Gyp.	$CaCO_3$	E.S.P.	%	%	C:N	Soil:Rx ratio
12.3	1.8	.2	.7	7.4	23.9	66.8				4.04	,198	11.9	
10.0	2.4	.2	.7	7.1	22.9	65.1				2.89	.147	11.4	
11.0	1.9	.2	.6	6.1	20.3	69.3				1.94	.107	10.5	
13.6	3.1	.2	.5	5.8	19.8	75.1				.97	.062	9.0	
13.0	3.2	.3	.3	4.7	20.7	77.9				.83	.049	7.6	
15.8	4.4	.3	.3	4.6	23.6	82.0				.47	.040	7.0	
15.8	4.5	.4	.3	3.1	24.3	87.1				.32	.031	6.1	
17.5	4.1	.4	.3	3.4	24.6	86.9				.33	.030	6.3	

$$\%C = \frac{\%OM}{1.72}$$

Reference for Data: Dr. Maynard Fosberg
Dept. of Plant & Soil Sciences
University of Idaho
Moscow, Idaho 83843

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No.	Particle size distribution (mm) (percent)								Gravel & Stone, etc.	Texture Class
	VCS 2-1.0	CS 1-0.5	MS 0.5-0.25	FS 0.25-0.1	VFS 0.1-0.05	TS 2.05	TSi 0.05-0.002	TC <0.002	>2mm.	
1	.11	.18	.17	1.09	7.24	8.79	70.23	20.98	-	Silt loam
2	.03	.06	.07	1.04	5.08	6.28	70.22	23.50	-	Silt loam
3	.02	.10	.17	1.38	5.53	7.20	71.28	21.52	-	Silt loam
4	.00	.07	.09	1.10	5.09	6.35	69.97	23.68	-	Silt loam
5	.00	.05	.09	.48	4.89	5.51	73.20	21.29	-	Silt loam
6	.09	.08	.12	.50	5.55	6.34	70.15	23.51	-	Silt loam
7	.00	.07	.17	.54	6.38	7.24	69.61	23.15	-	Silt loam
8	.02	.07	.21	.79	5.89	6.98	73.86	19.16	-	Silt loam

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